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MUSCLE & PERFORMANCE

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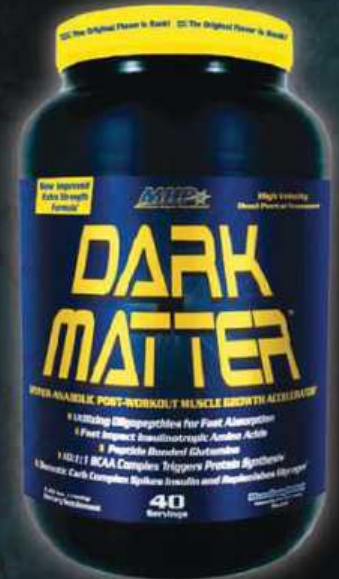
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"I challenge you to name a scenario in your life that wouldn't be made significantly better by being five, 10 or 15 percent stronger."

— Rob Orlando

ON THE COVER: Strongman + CrossFit Athlete Rob Orlando
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BODY SHOP

SUPPLEMENTS / NUTRITION & HEALTH / TRAINING

CREATINE'S LITTLE BROTHER

» You may or may not know, but creatine has a kid brother: glycocyamine, aka guanidinoacetic acid (GAA). And while GAA still has to prove itself in the lab as well as in the gym, it appears to be a promising new performance-enhancing product. In the body, GAA is produced by the kidneys and pancreas and is a natural precursor to creatine production in the liver. Excitement for GAA as a new fitness supplement comes from the fact that it's essential for energy production in skeletal muscle, has high oral bioavailability and can significantly boost the body's creatine production. In 2013, a study published in the *International Journal of Medical Sciences* confirmed the creatine-bolstering effect of GAA, with authors reporting up to a 50 percent increase in fasting serum creatine after six weeks of supplementation. Although research on GAA in unhealthy populations dates back to the 1950s, up until recently there have been no studies investigating its performance-enhancing effects in healthy humans.

A recent study published in the *Journal of Investigative Medicine* provides some of the newest data supporting the use of GAA as an ergogenic aid. Collaborating researchers from Serbia and the U.S. reported that **six weeks of GAA supplementation (up to 4.8 grams per day) without a formally prescribed exercise**

cise program improved muscular fitness by up to about 25 percent. Most notable were increases in grip strength and maximum number of repetitions performed during the bench press (to failure). Interestingly, there were no differences in lower-body strength with GAA supplementation versus placebo.

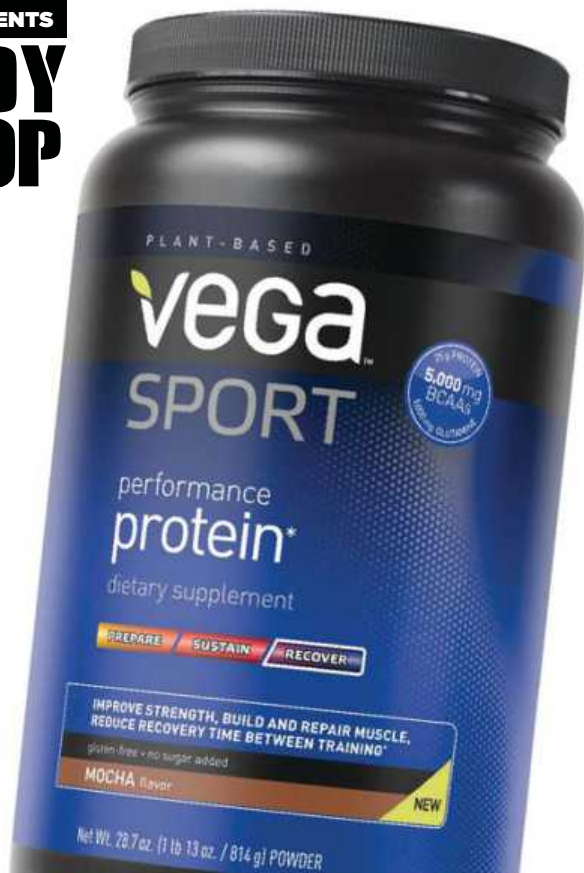
■ ACTION POINT: This latest study provides novel data illustrating that supplementing with GAA can improve upper-body strength and **endurance**, perhaps even without training. It will be interesting to see how improvements in strength develop when GAA is taken in combination with a structured resistance-training program. At present GAA is not commonly available, but with this kind of research it may not be long before it is. Stay tuned as more research comes out.

EDITOR'S NOTE:

Although the current study showed that taking GAA for six weeks was safe and didn't negatively affect liver health, before jumping on the bandwagon you must consider that there are health warnings associated with long-term GAA supplementation taken on its own. GAA causes increases in the body's homocysteine levels, which over time can promote cardiovascular disease. One way to safely avoid elevations in homocysteine is to take betaine (aka trimethylglycine) with GAA in a 4:1 betaine-to-GAA ratio.



Coming soon: a little brother who brings a bigger bench with him.



MAX STACK

MILK-FREE MUSCLE

» Lactose-intolerant lifters who want a dairy-free, plant-based protein powder need not despair: It can be found. But in the absence of known muscle-builders such as whey and casein (both dairy proteins), make sure your vegan shake contains these three ingredients for maximum performance benefits.

Hemp Protein: This vegan option is great for the gym rat because it's a complete protein, meaning it contains all nine essential amino acids (those which the body doesn't produce and must be consumed in the diet). Hemp protein also digests relatively easily, making it a good postworkout choice for feeding broken muscles quickly in their time of need.

Branched-Chain Amino Acids (BCAAs): This trio of essential aminos (leucine, isoleucine and valine) makes up a large proportion of the total amino acid content in muscle, but they're rapidly broken down for energy production during intense exercise. The best way to defend against BCAA loss is to keep levels elevated during and after training. **Keeping your BCAA stores topped off has been shown to turn on anabolism, blunt catabolism and shorten recovery time.** When researching non-dairy protein sources, look for those with a high BCAA content like yellow pea protein.

Glutamine: This widely researched amino acid is a favorite among diehard fitness types and professional athletes for its ability to promote recovery (and hence muscle growth) after workouts. As a bonus, glutamine is also known to enhance immune function. This makes it a valuable supplement for even nonexercisers, but hard-training individuals need it even more since intense workouts can compromise the immune system.

Find these ingredients and others in: Vega Sport Performance Protein

BIG BOOSTER HIGH INTENSITY? GET HMB

» β -Hydroxy- β -methylbutyric acid (HMB for short) is an active anabolic compound found in skeletal muscle that's formed through the breakdown of leucine. Although HMB is generally marketed as a muscle and strength builder, the latest research suggests that HMB supplements may be suited for those undergoing high-intensity/extended-duration training and competition events like CrossFit.

As recently published in the *Journal of the International Society of Sports Nutrition*, elite rowers who were undergoing a heavy training program and who took HMB for 12 weeks had decreased fat mass (over 2 pounds) compared to a slight increase in fat mass in the placebo group. Even more pertinent, athletes who took HMB saw a 4 percent increase in VO2 max (a measure of aerobic exercise capacity) and significant increases in peak power output during exercise testing while the placebo group experienced no such changes. Such elevations in exercise performance are surprising, considering the subjects were already performing at an elite level.



ACTION POINT: In the past, HMB was prescribed for those just beginning a workout program. However, over the past few years HMB has made a comeback when used at high enough doses and with high-intensity training programs. We recommend taking 3 to 6 grams of HMB with a protein shake, two to three times per day. Make sure one dose is taken 30 minutes preworkout.



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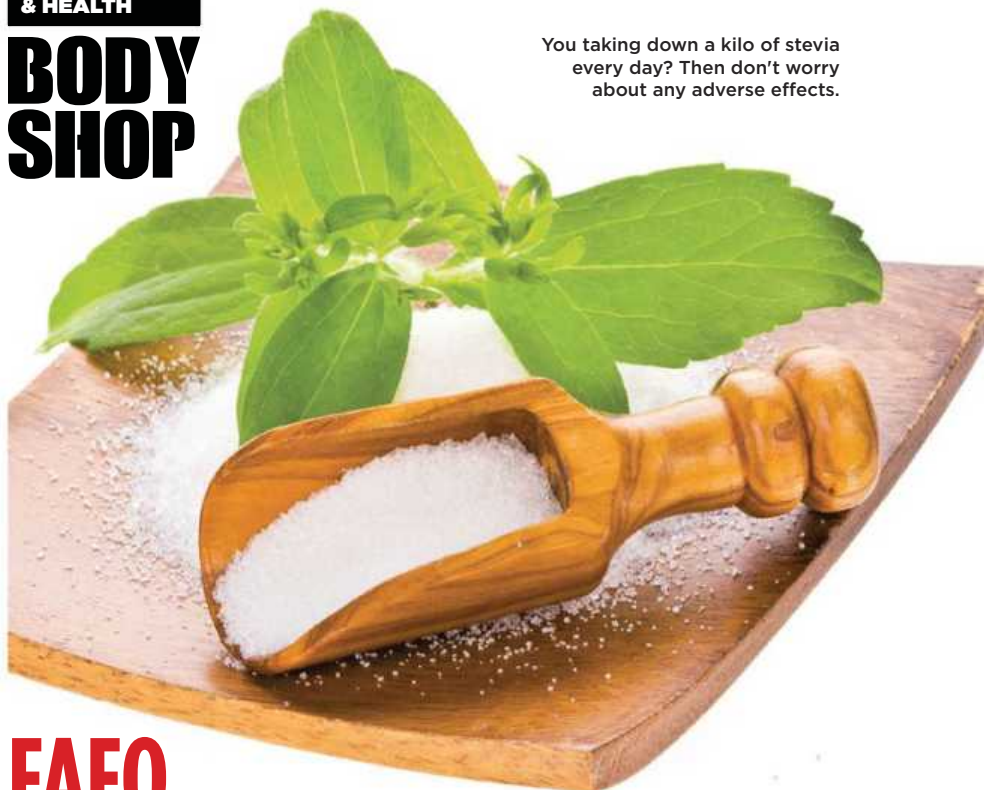
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FAFQ

(FREQUENTLY ASKED FOOD QUESTIONS)

By the scientists at *Examine.com*, an unbiased, unaffiliated resource on all things nutrition and supplements

Q: How bad for you are artificial sweeteners, and how much can I get away with eating?

A: Artificial sweeteners tend to get a bad rap. When they first hit store shelves, the idea of getting a sweet taste without the calories seemed too good to be true, which inspired a lot of researchers to look for flaws with these products. And although certain weight-loss agents either had blatant side effects (orlistat added to foods caused rampant diarrhea) or were taken out of prepackaged foods as a precaution (saccharin), that doesn't mean all sweeteners are inherently dangerous.

The truth is, there's still no convincing body of evidence to support the claim that prominent artificial sweeteners — aspartame, sucralose and acesulfame-potassium — negatively affect our health, especially in the minute amounts we find in our food. If we had to draw up a list of the most worrying data, No. 1 would probably be the 2008 finding that sucralose altered the intestinal microflora of rats that were fed a reasonable dose of the sweetener. But oddly enough, this study wasn't properly followed up on; the next study that looked at the interactions between sweeteners and the gut used saccharin, not sucralose. So while it's very possible sugar substitutes that share structural similarity to sugars (like sucralose and saccharin, but not aspartame) could interact with microflora, which might think those substitutes are glucose, right now these studies are too limited for us to draw any clear conclusions.

So how much can you get away with eating? **When it comes to the common artificial sweeteners, there's no such thing as a dangerous amount to consume.** Sure, pounding down literal pounds of these sweeteners could hurt you, but the extremely small amounts found in food products don't seem to be of any danger to humans.

The only sweetener that offers cause for concern is stevia, and even that has a reported safe intake of 8 milligrams per kilogram of bodyweight (about 540 milligrams for a 150-pound human). That amount is generally more than enough to sweeten beverages; in fact, even 1,500 milligrams in humans hasn't been shown to cause any problems. If you decide to consume approximately 1 kilogram over the course of the day, on the other hand — which is absurd — then rat studies suggest infertility problems. But in that case, the amount you'd be consuming would be enough to make your stomach want to kill itself from the sweetness. And even that dose is more plausible than an overdose of aspartame or sucralose.

—Kamal Patel, MPH, Director, *Examine.com*



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\$190 BILLION

The estimated annual cost of weight-related medical bills, according to the American Heart Association. Data pulled from the most recent National Health and Nutrition Examination Survey (NHANES, 2007–12) reveals that somewhere around 31.8 million men and 35.9 million women in the United States are obese. (Source: Medical News Today)



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"I'm totally earning pizza
with this." #nutritionfail

SNACKING SENSE

BEWARE OF "FITNESS FOODS"

» Just because a food is advertised as nutritious doesn't mean it is. And at the very least, a reasonably healthy snack choice doesn't give you a license to gorge on it to no end. A study recently published in the *Journal of Marketing Research* found that subjects participating in a controlled experiment consumed more trail mix — a food typically thought of as healthy even though it's often loaded with sugar — when the packaging literally said "Fitness" on it and showed a pair of running shoes versus when the label simply read "Trail Mix." Subjects were also given the option of exercising after eating the snack, and those who had eaten the "Fitness" trail mix exercised less vigorously than the others, thus expending less energy. The take-home message here: Packaged food and clever branding can be a dangerous mix (pun intended). When in doubt, snack in moderation.

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SCIENCE SAYS

A TRIO OF TWEAKS

Combing through recent studies in *The Journal of Strength and Conditioning Research* uncovered three tips that can (and should) be implemented in your training immediately. Like *now*.

DO 60-SECOND HIIT INTERVALS. A study from Cal State University, Fullerton found that male and female subjects who did eight 60-second HIIT intervals on a stationary bike burned significantly more calories than when they did the same number of all-out sprints for 30 seconds, even though the latter intervals were much more intense. Just goes to show that *harder* isn't always better. Training *smarter* always wins.

FOAM ROLL FOR FLEXIBILITY. University of Salzburg (Austria) researchers found that subjects who gave their hamstrings a foam roll massage three days

a week for four weeks increased flexibility in the area to a comparable degree as those using the well-established (and more painful) contract-relax PNF stretching method. Foam rolling has been known for years to promote recovery in damaged muscle tissue, but hasn't been used so much as a flexibility tool until now. In case you're wondering why you need more flexible hammies, here are two reasons: increased strength in big lifts such as squats and deadlifts and decreased injury risk. Either of those appeal to you?

PAIR PUSH AND PULL MOVES. A study out of Brazil found that three supersets of bench presses and wide-grip seated cable rows (in that order) produced a higher training volume in less time and induced greater muscle fatigue — a crucial precursor to packing on muscle — than when each of the two exercises was performed as three standard straight sets. More muscle, less time in the gym. Sold!



Give your hammies a weekly beatdown for greater range of motion and bigger lifts.

Photo by Robert Reiff

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STACKED FOR STRENGTH

Looking to jack your max? Then lift heavy and add these three strength builders to your list of must-have supps.

BY DWAYNE JACKSON, PHD

In the simplest sense, physical strength is the ability to exert force on physical objects using your muscles.

And because of the body's remarkable ability to adapt, repetitive feats of strength over time result in marked strength increases. It goes without saying that this adaptive process requires complex physiological and biochemical processing, and supplement research and development teams tirelessly strive to develop effective supplements to augment the body's ability to adapt. As a result, several compounds have been discovered to increase the rate at which we develop strength. Yet with the endless number of products available, it can be difficult (and expensive) to sift through them all to find what works. Here we focus on a few must-haves that are scientifically proven to improve strength in a short time.

CAFFEINE

It should come as no surprise that the most widely used strength supplement in the world is also one of the best researched. There are hundreds of stud-

ies that support caffeine as a safe stimulant that can boost cognition, release more fat during exercise, delay time to fatigue and blunt pain. In terms of its strength-boosting potential, caffeine is a rare supplement that can increase strength almost instantly.

A recent study published in *The Journal of Strength and Conditioning Research* reported that ingesting a single dose of caffeine before training increases both upper- and lower-body maximum voluntary contraction strength better than a placebo. Notably, research indicates that caffeine's effects on strength are most apparent in *trained* individuals.

Dosing: Take 200 to 400 milligrams one hour before training. If you have never consumed caffeine, start with the lowest dose and work up accordingly based on tolerance. If you exhibit symptoms such as shaking, nervousness, heart palpitations or anxiety, then you have taken too much. If you're a coffee or tea drinker, you may want to delay this preworkout dose to about six hours after your last sip.

CREATINE

Several decades of peer-reviewed research unequivocally support the many performance-enhancing benefits of creatine. Although it's a very potent strength booster, creatine doesn't start working noticeably with the first dose. However, strength increases can be noted within four to six weeks of consistent supplementation. A recent systematic review and meta-analysis published in *Sports Medicine* concluded that creatine supplementation is effective in lower-limb strength performance for exercise of less than three minutes (like a few sets of squats). In a similar review published earlier in *The Journal of Strength and Conditioning Research*, it was reported that creatine supplementation increases one-rep max (1RM) strength and max number of reps completed by an average of 10 and 15 percent, respectively.

Dosing: Although there are several different forms of creatine you can choose from, creatine monohydrate is the most studied form of creatine on the market. Take 3 to 5 grams of high-grade creatine monohydrate two times daily. On training days, take one dose 30 minutes before training and one dose immediately afterward.

BETA-ALANINE

This amino acid is the rate-limiting substrate in the formation of carnosine, so when it's supplemented adequately it elevates the body's muscle carnosine levels. Research shows that just four weeks of beta-alanine supplementation can increase muscle carnosine levels by more than 60 percent. Why is this important for strength? Because elevated muscle carnosine increases the body's ability to buffer skeletal muscle pH (acidity) during prolonged high-intensity exercise. Since a primary cause of fatigue during heavy exercise is metabolically mediated by decreases in pH (or acidosis), it makes sense that increased intramuscular carnosine levels would be beneficial to bodybuilders and strength athletes.

Dosing: Take 2 to 3 grams of beta-alanine 30 minutes before and immediately after training. On rest days, take 2 to 3 grams with breakfast and 2 to 3 grams later in the day. ■

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WOMEN & HYPERTROPHY

Mythbuster: If I lift weights, will I look like a man?

BY LARA MCGLASHAN, MFA, CPT

I don't want to get big and bulky, I just want to get toned!

Every personal trainer on the planet wants to commit hari-kari with the nearest set of body fat calipers when a new female client says this. The "bulking up" myth is on par in infamy with Little Mikey kicking the bucket from eating Pop Rocks and drinking Coca-Cola simultaneously. But unlike Mikey's myth, this one won't die.

"The biggest misconception about hypertrophy — gaining muscle — in women is that it happens quickly and easily, when in fact gaining significant amounts of muscle mass as a woman is *hard*," says Molly Galbraith, CSCS, co-founder of Girls Gone Strong in Lexington, Ky. (girlsgonestrong.com) "You have to lift challenging weight for enough repetitions with enough time

under tension to force an adaptation." In addition, most women simply do not have the copious amounts of testosterone of their male counterparts to allow for bulky gains.

This could be a good thing or a bad thing, depending on your goals. If you're a "toner," then not to worry: You won't become the Hulk. "When a woman starts strength training, she can expect to gain 0.5 to 1 pound of muscle per month at the absolute maximum," says Galbraith. This is achieved with consistent, challenging lifting and dedicated nutrition, and most recreational lifters using moderate amounts of weight will stay well below this threshold and achieve their goal of toning. (By the by, toning is just another way of saying "adding muscle." You're just not adding a *lot* of muscle).

If your goal is to gain some sleek size and shape or bring up certain bodyparts, however, then your task is more challenging. "Those initial size gains will taper off over time as you become a more advanced lifter," says Galbraith. But you can push your limits and force adaptation through conscientious programming.

Lifting in the six to 12 rep range is best for hypertrophy, according to Galbraith, but she also emphasizes building a solid foundation of strength. "The stronger you are, the more weight you can lift for more repetitions, leading to more lean mass gains," she says. "Performing large, compound movements such as squats and deadlifts in the one to five rep range is great for building your foundation of strength."

When you're looking to gain, Galbraith advises using a four-day split in which you do two heavy days to build strength and two repetition-focused days to add muscle. Follow a program such as this for four to six weeks for optimal hypertrophy:

SAMPLE HYPERTROPHY SPLIT

Day 1	Heavy, Upper Body
Day 2	High Reps, Lower Body
Day 3	Rest
Day 4	High Reps, Upper Body
Day 5	Heavy, Lower Body
Days 6-7	Rest

Adding advanced techniques can also push your boundaries. "We are much stronger in the eccentric [lowering] phase of an exercise than we are in the concentric [lifting phase]," says Galbraith. "We can use this to our advantage by really slowing down the negative rep for increased time under tension. Drop sets, where you perform reps to failure, then reduce the weight and continue the set, are also a great way to increase time under tension and tax both your fast- and slow-twitch muscle fibers."

Still convinced you're going to Hulk out? Then remain a cardio queen and cruise the status quo. But if you want to change your physique, boost your metabolism and increase your energy levels, then get your lift on and embrace hypertrophy, however much of it may come. ■

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¹Kerksick et al. (2008) International Society of Sports Nutrition position stand: Nutrient Timing. Journal of the International Society of Sports Nutrition. 5:17 Accessed 4/19/13 from <http://www.jissn.com/content/5/1/17>

²Towheed. (2009). Glucosamine therapy for treating osteoarthritis (Review). The Cochrane Collaboration. Published by John Wiley & Sons, Ltd. Accessed 4/19/13 from http://www.rafa.co.uk/_Uploads/631Cochrane_review_2009.pdf

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Big lifts = better body comp. Get ready to turn up the heat.

LIFT BIG, LOSE FAT

Think the three big powerlifting exercises are only for getting strong and huge? Think again. Better yet, think *lean*.

BY JOE WUEBBEN

Big lifts aren't just for massive gains in strength and size. Sure, the biggest, strongest individuals in the world build their training programs around squats, deadlifts and presses (bench and/or military), but these powerlifting moves are just as effective for shedding body fat. It's all a matter of approach, really. The powerlifter typically stays within the one to five rep range, stopping short of muscle failure on most sets. One-rep max (1RM) strength, not getting shredded, is the priority.

Perhaps you don't particularly care what your 1RM is on squats, deads or presses and are more concerned with being lean. Fair enough, but that doesn't mean your exercise selection needs to change. The big lifts can still be your No. 1 ally, albeit with considerably higher rep counts than one to five. If you've ever lightened the weight on barbell squats and taken a set anywhere close to failure, you know the feeling: Your legs burn, your head hurts and you're sucking wind afterward like you just ran an all-out 200-meter dash. That's the feeling of change, of

your body being well outside its comfort zone. Repeat this on a regular basis and you *will* lose body fat. You'll probably build some muscle, too.

"The major benefit to a high-rep weightlifting approach is the human growth hormone (HGH) release that comes with this much intensity and load," says Josh Elmore, a certified strength and conditioning coach and owner of Conjugate Consulting in Charlotte, N.C. (conjugateconsulting.com) "Produced by the pituitary gland, HGH has benefits that range beyond helping us grow. It's hugely important to your body composition, especially burning fat, lean muscle growth and metabolizing sugar."

News flash: CrossFit didn't invent the big-lift/high-rep set. The concept goes back to at least the 1930s, when weightlifter Mark Berry first introduced his famed 20-rep "deep knee bend" (squat) program: a routine centered around one all-out extended set of squats that to this day is still revered and practiced by reputable strength coaches around the world. In the section below, Elmore provides specific guidelines for implementing the 20-rep model into your program on virtually any big lift of your choosing.

"At the end of the day, working high-rep weightlifting into your training program can help you get stronger, increase your conditioning and burn more fat," says Elmore. "Couple that with a dietary intake that supports muscle growth and prevents fat accumulation, and you'll ramp up your fat burning in no time." ■

20 REPS TO SHREDDED

DURATION Perform the high-rep program either three times per week for six weeks or twice a week for eight weeks.

EXERCISE SELECTION Use the 20-rep scheme on one of the three big lifts (squat, deadlift, bench press or military press) at a time, although advanced athletes can implement it on two or three lifts concurrently.

WEIGHT SELECTION The premise here is *not* to use a light weight and bang out 20 tough reps; rather, it's to pick a moderately heavy weight and do 20 quality reps in the span of about three minutes. Select your training load for each exercise in one of two ways: 1) simply use your 10-rep max, or 2) figure out how long you're going to do the program and subtract 5 pounds for every training session from your five-rep max. For example, if your 5RM is 350 pounds and you're going to train three times a week for six weeks (18 total sessions), use 260 pounds for the 20-rep set.

EXECUTION Elmore recommends doing one rep at a time and resting briefly between each without re-racking the bar rather than stringing together multiple reps, resting for a longer period, doing another few reps and so on until 20 reps are completed. "Slow and steady wins the 20-rep race," he says. "I'll hit a rep, take a few breaths, then get set and hit another. I'll try to keep this same pace for the whole set. I don't think banging out a few reps and then taking a longer rest is as effective. A 20-rep max should take about three minutes. Take your time and focus on your breathing between reps."

VOLUME Complete only one 20-rep max set per exercise on two to three nonconsecutive days a week. Take your time warming up and give that single set everything you have.

OTHER LIFTS After performing your 20-rep max set, proceed with the rest of your regularly planned exercises for that training session, being mindful to moderate total volume and intensity as needed to prevent overtraining.

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Get explosive, athletic and aesthetic. Time in the Octagon is optional.

FASTER, STRONGER, BIGGER

Be a better, more agile athlete by ripping a page from the UFC's playbook.

BY MICHAEL BERG, NSCA-CPT

Can a physique-minded athlete benefit from stepping outside the comfort zone of presses, squats and rows? Absolutely, says Dustin Kirchofner, certified strength and conditioning coach at Yuma United MMA and owner of Modern Warfare Fitness. Kirchofner has trained an array of top-level mixed martial artists and boxers, including UFC welterweights Edgar Garcia and Kelvin Gastelum, 13-time North American Grappling Association champion and 2014 Gracie World Jiu-Jitsu champ Kevin Nicasio and four-time national boxing champion Victor Arriola. He has seen the potent benefits of combining various training styles to maximize power, performance and — as is so often the pursuit — aesthetic mass.

“In order to put the strength, power, stability and force production gained in the weight room to good use, you must be able to harness all those traits and apply them to the real world,” he says. “Plyometric exercises are the answer.”

Plyometrics, or plyos for short, are exercises that enable a muscle to reach maximal strength in as short a time as possible, Kirchofner explains. “The proper application of plyos help to prevent injury and allow you to produce, control and reduce force.”

Kirchofner, who also holds a National Association of Speed and Explosion certification, devised two workouts that can be used weekly in conjunction with a traditional bodypart split. He recommends doing the medium-intensity program twice per week for two weeks, then adding in the high-intensity workout starting the third week and doing each of them once every seven days, with at least 48 hours separating the two sessions.

Photos by Robert Reiff

WORKOUT 1: MEDIUM INTENSITY

EXERCISE	SETS	REPS
Squat Jump	3	6-10
Lateral Cone Jump	3	6-10
Double-Leg Tuck	2	8-10
Over Back Under & Forward Med-Ball Throw	2	8-10
Drop and Catch Push-Up	4	6-10

* Rest two minutes between sets.

WORKOUT 2: HIGH INTENSITY

EXERCISE	SETS	REPS
Double-Leg Tuck	3	8-10
Alternating Leg Bound	3	8-10
Pike Jump	2	8-10
Med-Ball Throw with Russian Twist	3	8-10
Dumbbell Swing	2	8-10

* Rest two minutes between sets.

JUMP TO IT

Use this guide to get your form straight on some of Kirchofner's prescribed moves.

› Squat Jump

From a standing position, lower yourself into a deep squat, then forcefully extend at the hips and knees to leap into the air. Land with soft knees and repeat.

› Lateral Cone Jump

Leap from side to side over a cone, landing with soft knees and descending into a partial squat before leaping to the opposite side.

› Double-Leg Tuck

From a standing position, leap straight up and bring your knees up as high as you can toward your chest.

› Over Back Under & Forward Med-Ball Throw

Start by holding the ball underhand and swing it overhead as if doing a kettlebell swing. Next, bring the ball down between your legs while bending your knees, then throw it forward (outward and up) with as much power as you can, either using a wall or an open area where a partner can retrieve it.

› Drop and Catch Push-Up

Kneel on the floor with your torso upright. Place both hands a few inches in front of your chest and fall forward, catching yourself with your elbows bent in the bottom phase of the push-up. Immediately push forcefully with both hands to extend your elbows and return to the start position.

› Alternating Leg Bound

Use a long, open space (like an empty aerobics room) to bound down the length of the floor, alternating which foot touches down on each bounce.

› Pike Jump

Stand with your feet shoulder-width apart and your arms at your sides. Jump straight up and move your extended legs out in front of your body as you reach out both arms to touch your toes in midair. Land and immediately repeat.

› Med-Ball Throw with Russian Twist

You'll need a partner for this one. Lie faceup on a Swiss ball, upper back and head in contact with it, feet planted on the floor and glutes elevated. Hold a med ball with both arms at full extension. From there, twist at the hips down to one side until your arms are parallel to the floor, then quickly twist back and toss the ball to your partner. Complete all reps on one side before switching to complete the set. (If you don't have a partner, do the twist without the throw.)

› Dumbbell Swing

Stand with your feet just outside shoulder-width, holding a dumbbell with both hands in front of your hips. Squat as you lower the weight between your legs, then swing it up in front of you as you stand. At the top, your arms will be outstretched and the dumbbell will be at shoulder height. In a continuous motion, allow the dumbbell to come back down as you bend your knees for the next rep. ■



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CHANDLER JONES

Meet the latest addition to MuscleTech's already formidable roster of athletes.

BY JERRY KINDELA, MA, DHS

The top pass rusher for the New England Patriots, defensive end Chandler Jones is an exceptionally talented powerhouse. He has recorded 23.5 sacks and 167 combined career tackles, and these were tallied during his first three seasons of NFL play. During the 2015 preseason he displayed such moxie and grit — getting by or going through much larger opposing team protectors — that the Boston Herald referred to him as “a beast.” “He was unstoppable, beating everyone the Saints put in front of him,” according to columnist Karen Guregian. Not bad for being essentially a newcomer to the pro side of the game. This may help explain why Iovate's MuscleTech supplements has added his name to its sponsored athletes roll, where he joins Patriots teammate Rob Gronkowski, another magician on the playing field.



Breakfast

MuscleTech Nitro-Tech
Milk Chocolate

Late-Night Snack

MuscleTech Nitro-Tech

You have a brother in the NFL and another in the UFC. Is that what makes you so competitive?

Yeah, for sure. I'm the youngest and I always aspired to be like them, and I had to go harder because they were older. It definitely got fierce from time to time. That's probably where I get it from. Even today, they push me to be better.

How does your off-season training differ from your in-season training?

The biggest difference is the weight I'll use. I go heavier in the off-season. During the season, it's more about maintenance and maintaining mobility with my size.

How do MuscleTech supplements help you maintain your physique on the road?

I use them a lot, after games especially. If we're traveling for an away game, it's always a rush. By having my Nitro-Tech protein with me, I'll take it when we get on the plane or bus. It keeps me fueled and helps me retain my muscle through the grind of the season. I also have a Nitro-Tech shake at breakfast and one as a late-night snack.

How do you maximize your recovery?

In addition to supplements and nutrition, ice baths and tons of stretching are my staples. Recovery is the most important factor, in my opinion, for maintaining conditioning and performance. If you don't recover right, your performance will suffer. ■

WAR FOR THE CORE

For a defensive end whose job it is to crush the hopes (and rib cages) of would-be receivers, having a concrete midsection is a must. Chandler Jones uses this quick-and-dirty workout to keep his middle tight.

EXERCISE	SETS	REPS
Spiderman Plank Crunch	3	25
Cross-Body Crunch	3	25
Swiss-Ball Rollout	3	20
Bicycle Kick	2	20

Rest 30-60 seconds between sets and exercises.

CHANDLER JONES

Birthdate: Feb. 27, 1990
Birthplace: Rochester, N.Y.
University: Syracuse, N.Y.
Current City: Foxboro, Mass.

Height: 6'5"
Weight: 265 pounds
Twitter: @Chan95Jones
Facebook: /ChandlerJonesOfficial
Instagram: Chan95Jones

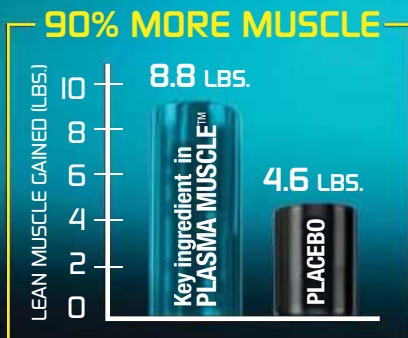
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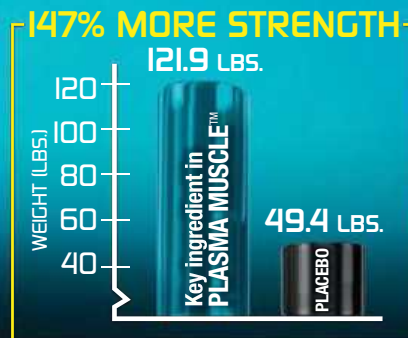
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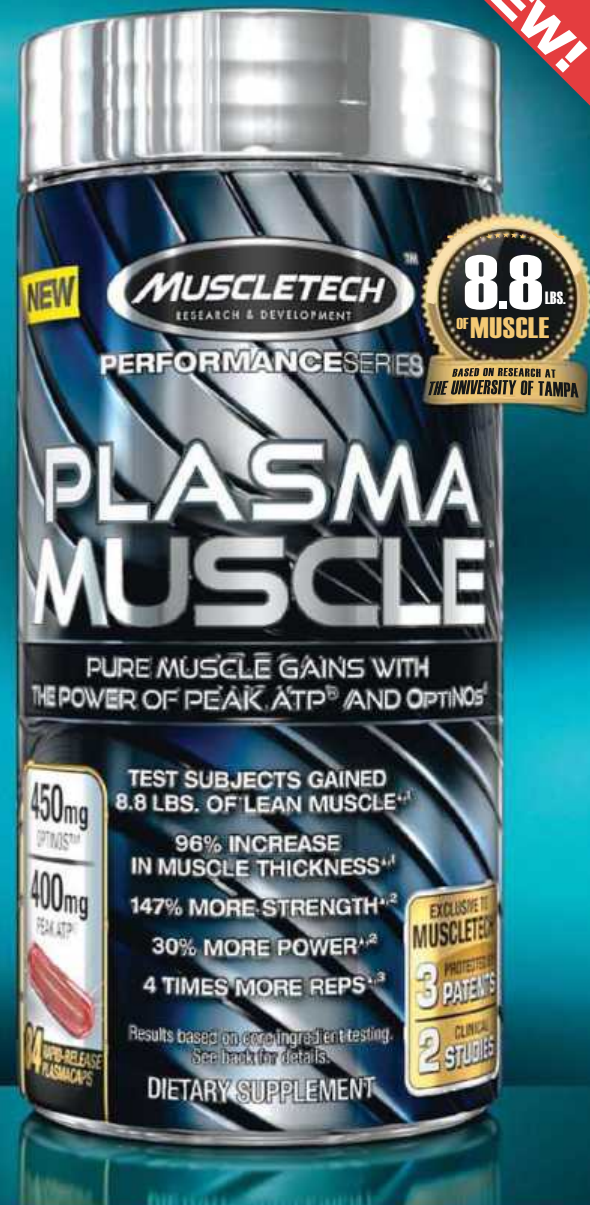
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GET TO KNOW: PRIME NUTRITION

Built on total transparency and a commitment to producing the best products available, this young company is looking to reshape the industry.

BY JILL SCHILDHOUSE

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an amino acid that actively delays pH buildup in the muscles to stall fatigue; 750 milligrams of agmatine sulfate to greatly increase hyperaemia (blood flow to tissues); and 400 milligrams of caffeine anhydrous.

COMPANY MISSION Developed from the ground up to give the customer a great experience and elite product, Prime Nutrition truly adheres to its maxim "The Best or Nothing."

SNEAK PEEK Prime Nutrition has plans to collaborate with fitness and nutrition expert John Meadows to develop a superior-quality protein formula that could release in early 2016. As some companies are reducing the quality of their protein in an effort to cut back on production costs, Prime has vowed to put out a high-quality protein product so athletes get the maximum benefit, even if the company has to incur additional costs to do so.

Also in 2016, Prime Nutrition will further its social media reach and perform more live product demonstrations at retail locations.

TOTAL TRANSPARENCY "I encourage people to look at the labels of our products and see that there are no proprietary blends, which means you'll know the exact amount of each ingredient to be found in our products," says Chris Evangelista, vice president of Prime Nutrition. "We stand by the quality of what we have to offer and want to share that with our customers. Prime Nutrition is renowned for creating products with efficacious doses and trusted ingredients."

PROFESSIONAL PHYSIQUES Prime Nutrition actively sponsors many athletes in the fitness industry, including IFBB pro Stephanie Mahoe and bodybuilding guru John Meadows. More notably, the president of Prime Nutrition, PJ Braun, is a top-ranked amateur bodybuilder and is known for the many successful physique athletes that he has coached in both the amateur and pro ranks. ■

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Crush all your maxes with
this six-week, strongman-
inspired program.**

BY LOGAN GELBRICH, CFL2
PHOTOGRAPHY BY IAN SPANIER

THERE'S NO DOUBT THAT THE SPORT OF **STRONGMAN** DEVELOPS SOME OF THE MOST POWERFUL PEOPLE ON THE PLANET.

Strongman demands fringe, high-level strength like that of powerlifting, yet with a capacity that extends beyond the single, max-effort rep and into grueling efforts as long as 60 to 90 seconds of pure power output. But don't flip ahead to the next article yet; it just so happens that the gamesmanship and increased degree of variability make strongman a viable training approach for anyone.

For the next six weeks, this program will not only promote clear, measurable strength gains but also add intensity and variety to a humdrum routine. First you'll set a baseline of performance with two events: an upper-body effort and a lower-body effort. Come Week 6, you'll set new personal bests in both.

» **UPPER BASELINE:** In traditional strongman fashion, the upper-body baseline strength event is a 60-second, max-rep alternating circus dumbbell press. You'll need to shoulder and press a heavy dumbbell for max reps in 60 seconds, successfully securing those reps by alternating sides. Although the dumbbells in most conventional gyms aren't as large as a circus dumbbell and have smaller handles, they'll suffice for this baseline. Choose a weight you can press three or more times in 60 seconds. The heavier the dumbbell, the better it will be to test strength and performance improvements.

However, strength doesn't always mean conventional starts and finishes. It should be noted that the term "press" in strongman includes all methods of pressing, including the push press and jerk techniques. All methods of shoulder-to-overhead are acceptable here.

» **LOWER BASELINE:** The lower-body baseline strength event is a 60-second, max 18-inch deadlift. To achieve that range of motion, you should pull from four-inch blocks. Using plates is a helpful modification as long as their height puts the bar roughly an additional four inches off the floor and you use the same plates for your final effort. Choose a weight you can typically pull for five or more reps in 60 seconds.

DIVERSITY + ACCESSIBILITY

Our six-week training program will demand strength adaptation via some tried-and-true strongman elements without requiring all the specific strongman tools you won't find in

most gyms. Expect to see a max-effort upper- and lower-body day each week, as well as a dynamic, or speed-focused, upper and lower day each week. To get stronger you need to produce force faster, so let speed be your guide on dynamic-effort days. The most common mistake on speed days is to choose a load that you can't move fast enough, which prevents the central nervous system from recruiting more motor units for these movements. Here, go a bit lighter to get more out of each exercise.

In addition to the primary move, each day will include assistance work. These mostly conventional movements can be loaded as heavy as possible as long as you can complete the prescribed number of reps with quality form. Lower-body days will comprise familiar exercises to support lumbar strength, glutes and hamstrings. On upper-body days, the assistance work will build a support system for an incredible press by developing the upper back and triceps.

Each day will also include a short but intense conditioning session. Remember, the sport of strongman involves slightly more athleticism and strength endurance than, say, powerlifting, which is more of a single-effort activity. For strongman-type strength and stamina, 60 seconds is the eternity you'll need to train for.

Each day will conclude with a high-rep finisher that often comes in sets of 100 reps. To improve your performance over these six weeks, recovery will be critical, and these finishers use lighter weight in order to flood the working area with blood and nutrients. Choose a weight with which you could do 100 unbroken reps. If you fail before 100, complete the remaining reps in as few sets as possible and with as little rest as possible in between. If you can hit 100 without resting, add weight next time.

PRIMAL ATHLETICISM

Strongmen are pros at building heaps of well-conditioned muscle. Performing unconventional moves, training strength endurance and building freaky grip strength all contribute to the kind of primal athleticism that anyone can benefit from.

If you've always wanted to try strongman training but don't have access to massive tractor tires, kegs, the log and Atlas stones, you're in luck: This program may be the perfect introduction to building strength like a strongman inside your regular gym.

WORKOUT NOTES

» For all assistance exercises, rest 60 to 90 seconds between sets. For all core exercises, limit rest to 60 seconds or less.

» For all sets of 100 reps, if you fail before 100, rest 10 to 15 seconds before continuing the set. Repeat as necessary to reach 100 reps.

» If you can hold a plank for longer than the time prescribed, use a weighted vest or have your partner add plates to your back.

» To find your one-rep maxes (1RM) on certain exercises, after a warm-up, simply work up to the heaviest single rep that you can complete with good form. Take as many sets as necessary to find your 1RM and rest as long as 3-5 minutes between sets.

» Each week features four workouts, designed to follow a Monday-Tuesday-Thursday-Friday schedule. Feel free to adjust as necessary based on your own schedule and rate of recovery.



CIRCUS DUMBBELL PRESS

Use as heavy a dumbbell as you can get from shoulder to overhead for a single rep. You'll alternate sides between each max-effort press for 60 seconds. Push and jerk techniques are acceptable.

This single-arm feat of strength places a high demand on your shoulders, triceps, core musculature and posterior chain.

EMOM = Every minute on the minute. » At the top of every minute, perform the work listed and then rest for the remainder of the minute. Repeat each minute for the amount of time prescribed.

WEEK 1

Here begins your journey to bar-bending strongman prowess. Begin each workout listed with a thorough warm-up that includes five to 10 minutes of general and dynamic movement. An example would be four minutes on an exercise bike followed by six minutes of various range-of-motion activities that progress in their level of difficulty. This is essential for elevating core body temperature, lubricating joints and activating your central nervous system for the high-intensity work to follow.

DAY 1

Exercise/Activity	Sets	Reps/Time
<u>Baseline Test</u>		
Circus Dumbbell Press ¹	1	60 seconds
<u>Assistance Work</u>		
Barbell Z-Press ²	3	8
One-Arm Dumbbell Row	3	10 (each side)
<u>Core Work</u>		
Barbell Rollout	3	8
Plank	3	60 seconds
<u>Conditioning</u>		
<i>Every minute on the minute (EMOM) for 12 minutes:</i>		
Odd minutes: Plyometric Push-Up		6
Even minutes: Kettlebell Swing ³		12
<u>Finisher</u>		
Lying Triceps Extension	1	100

¹ Clean the dumbbell to shoulder level, press, then return it to the floor and repeat on the other side. Alternate reps for 60 seconds and log your total.

² Set up the pins in a power rack anywhere from clavicle to chin height. Perform overhead presses while seated, legs out in front of you. See page 38.

³ Use the heaviest kettlebell that you can handle effectively for 12-15 reps.

DAY 2

Exercise/Activity	Sets	Reps/Time
<u>Baseline Test</u>		
18" Deadlift ⁴	1	60 seconds
<u>Assistance Work</u>		
Romanian Deadlift	3	8
Back Extension	3	12
<u>Core Work</u>		
Dumbbell Windmill ⁵	3	5 (each side)
<u>Conditioning</u>		
<i>Work for 60 seconds, then rest three minutes. Do five rounds:</i> ⁶		
Farmer's Walk (100 feet, 50 feet each way)		
Barbell Front Squat		To failure
<u>Finisher</u>		
Barbell Good Morning	1	100

⁴ Set up the barbell so the weights rest on blocks that are four inches in height (weight plates will work, as well). Select a weight with which you can complete five or more reps in 60 seconds. Use straps if necessary to maintain your grip for the full minute.

⁵ Standing with your feet spaced wider than your hips, raise the dumbbell overhead and lock your arm in this position. Bend over to touch the floor between your feet or your same-side foot with your opposite hand, then contract your glutes, hamstrings and lower back to return the dumbbell back to the start position. Complete all reps for one side before switching. See page 45.

⁶ For this conditioning circuit, grab a set of heavy dumbbells and walk 50 feet out and 50 feet back, then perform max reps of the front squat with about 70 percent of your 1RM. Rest three minutes after the squats. Your score is your front squat total for all five rounds.

DAY 3

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Upper Body</u>		
Speed Bench Press	10	3 ⁷
<u>Assistance Work</u>		
Pull-Up	3	8 ⁸
Barbell Row	3	8
<u>Core Work</u>		
Dumbbell Russian Twist	3	20 (each side)
Kneeling Cable Crunch	3	12
<u>Conditioning</u>		
<i>EMOM for 12 minutes:</i>		
Odd Minutes: Plyometric Push-Up	6	
Even Minutes: Kettlebell Swing ³	12	
<u>Finisher</u>		
One-Arm Bent-Over Lateral Raise	3	20 (each side)

7 Sets begin every 60 seconds with maximum bar speed. Load the bar with approximately 55 percent of your 1RM and focus on moving the bar as quickly as possible, under control.

8 If you can do more reps, use a dipping belt or weighted vest.

DAY 4

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Lower Body</u>		
Barbell Squat	12 ⁹	2
Sumo Deadlift	8 ¹⁰	1
<u>Assistance Work</u>		
Pause Squat	3	5
<u>Core Work</u>		
Weighted Sit-Up	3	10
<u>Conditioning</u>		
<i>As many rounds as possible (AMRAP) in 10 minutes:</i>		
Alternating Dumbbell Step-Up		10 (each side)
Plate Push (50 feet, 25 feet each way)		
<u>Finisher</u>		
Glute Bridge	1	100

9 Sets begin every 45 seconds with maximum bar speed. Load the bar with approximately 65 percent of your 1RM.

10 Sets begin every 30 seconds with maximum bar speed. Load the bar with approximately 70 percent of your 1RM.

AMRAP = As many rounds as possible. » Perform all the exercises in the order listed without rest as many times as possible in the time prescribed.

BARBELL Z-PRESS

Perhaps the least comfortable movement in this lineup of strength-boosters, the Z-Press addresses postural muscles in a more challenging (and likely unfamiliar) way. Start lighter on this move to get a feel for it. Focus on maintaining straight legs and a rigid core as you press forcefully overhead.



FINDING YOUR 1RM » While there are multiple documented “expert” programs for finding your single-rep max, we believe it is a very personal process. While some guys can simply walk into the gym and bang out a new max on their first rep of the day, we advise a more detailed methodology. Follow your five- to 10-minute general warm-up with some specific warm-up sets of the exercise being tested to mentally and physically pattern the movement while also increasing blood flow to participating muscle groups. Adding weight each set and taking as much rest as you feel is necessary, work your way toward your 1RM in as few sets as possible to avoid spending precious energy ahead of the test. Repeat the single-rep attempt, if necessary. Log your highest successful attempt.

DEFICIT DEADLIFT

It can be argued that the only thing better for pure strength than a deadlift is a *longer* deadlift. This variation provides you with a stronger start on the standard or elevated deadlift because you’re working the same muscles through a longer range of motion.



WEEK 2

DAY 1

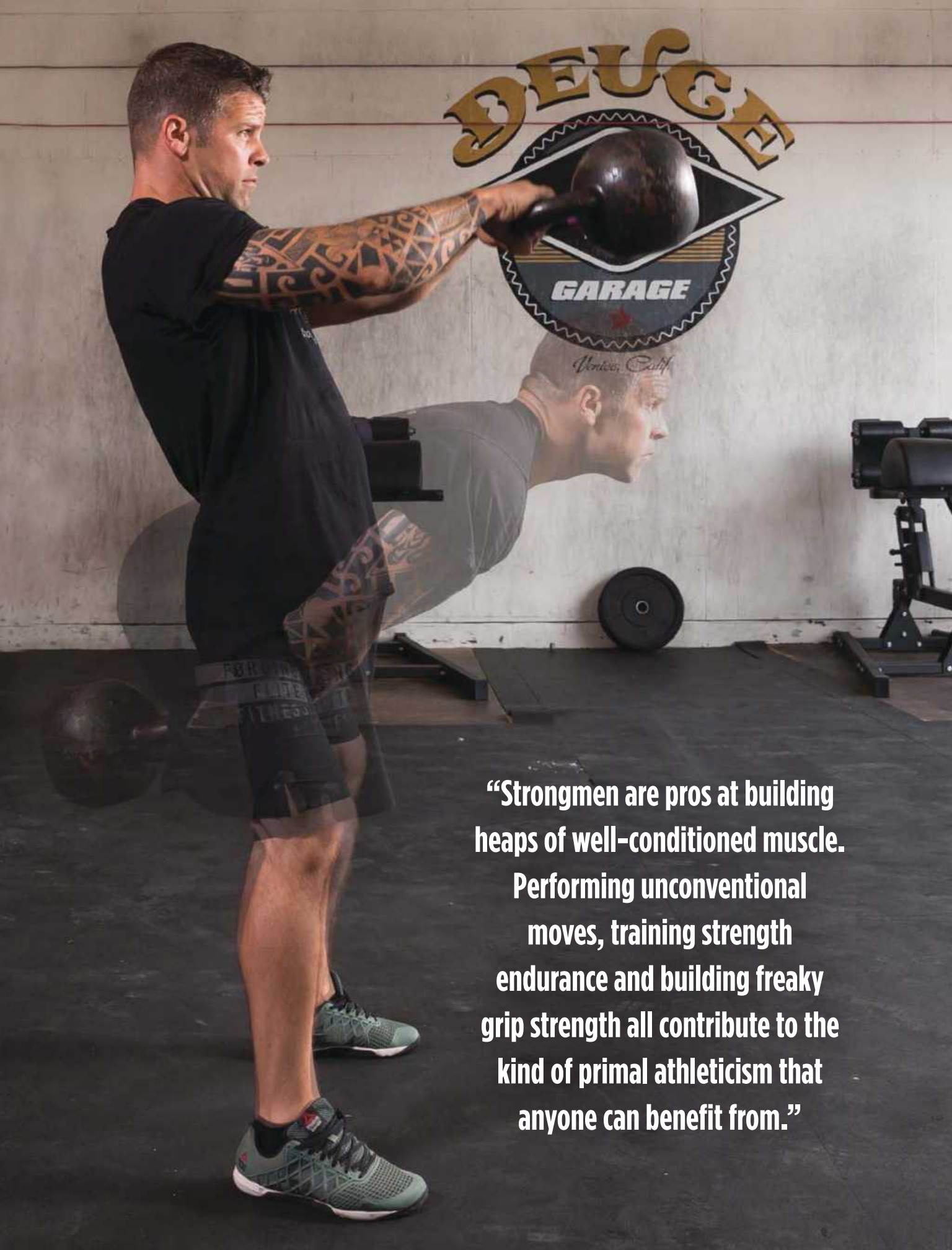
Exercise/Activity	Sets	Reps/Time
Max Effort: Upper Body		
Find 1RM Floor Press		
Assistance Work		
Chest Dip ⁸	3	8
Close-Grip Push-Up	3	To failure
Core Work		
Barbell Rollout	3	10
Plank	3	60 seconds
Conditioning		
Dumbbell Push Press	1	60 ¹¹
Finisher		
Barbell Row	1	100

¹¹ Use a weight that you can handle for 10-12 reps on your first work segment. Perform five pull-ups every time you hit momentary muscular failure.

DAY 2

Exercise/Activity	Sets	Reps/Time
Max Effort: Lower Body		
Find 1RM Barbell Squat		
Assistance Work		
2" Deficit Deadlift ¹²	3	10
Back Extension	3	12
Core Work		
Dumbbell Side Bend	3	12 (each side)
Sit-Up	3	20
Conditioning		
EMOM for 12 minutes:		
Odd Minutes: Weight Plate Pinch		20 seconds
Even Minutes: Barbell Walking Lunge		4 (each side)
Finisher		
Barbell Good Morning	1	100

¹² Stand on a platform of the prescribed height, allowing additional travel for the weight.



**“Strongmen are pros at building
heaps of well-conditioned muscle.
Performing unconventional
moves, training strength
endurance and building freaky
grip strength all contribute to the
kind of primal athleticism that
anyone can benefit from.”**

DAY 3

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Upper Body</u>		
Speed Bench Press	10 ⁷	3
<u>Assistance Work</u>		
Triceps Pressdown	3	8
One-Arm Dumbbell Row	3	10 (each side)
<u>Core Work</u>		
Dumbbell Windmill ⁶	3	6 (each side)
<u>Conditioning</u>		
<i>AMRAP in eight minutes, using a 1-2-3-4-5-6-7 protocol:</i>		
Circus Dumbbell Press	1 (baseline weight, each side)	
Pull-Up		
<u>Finisher</u>		
Face Pull	1	100

DAY 4

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Lower Body</u>		
Barbell Squat	12	2
Sumo Deadlift	8	1
<u>Assistance Work</u>		
Circus Dumbbell Press ¹	3	8 (each side)
Romanian Deadlift	3	8
<u>Core Work</u>		
Barbell Rollout	3	12
<u>Conditioning</u>		
<i>Work for 30 seconds, then rest 90 seconds. Do five rounds:</i>		
Kettlebell Swing	3	30 seconds
<u>Finisher</u>		
Stiff-Legged Sumo Deadlift	1	100



PAUSE SQUAT

Calling for a deliberate pause at the bottom of a squat, this lift forces you to generate as much force as possible on the positive portion of the rep. It eliminates the benefit of elasticity, which works in your favor as you work on gaining appreciable amounts of strength. You'll have to use less weight than you would on typical working sets of the back squat. This technique can be employed on any squat variation (front, sumo, etc.).

ZERCHER SQUAT

Even those who are impressed with their current squat would be humbled by this exercise. To perform the Zercher correctly, hold the barbell in the crook of your elbows, maintain a rigid upper body and squat as normal, resisting the inevitable forward lean that the barbell placement invites.



WEEK 3

DAY 1

Exercise/Activity	Sets	Reps/Time
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Max Effort: Upper Body

Find 1RM Barbell Push Press

Assistance Work

One-Arm Dumbbell Overhead Press	3	8 (each side)
Lying Triceps Extension	3	10

Core Work

Plank	3	60 seconds
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Conditioning

For time, using a 10-8-6-4-2 protocol:

Dumbbell Renegade Row
Plyometric Push-Up
Pull-Up

Finisher

Incline Bench T-Raise	3	30
Incline Bench Y-Raise	3	30

DAY 2

Exercise/Activity	Sets	Reps/Time
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Max Effort: Lower Body

Find 1RM Deadlift

Assistance Work

Pause Squat	3	5
Back Extension	3	12

Core Work

Barbell Rollout	4	10
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Conditioning

Rest 30 seconds between exercises and 60 seconds between rounds. Do three rounds:

Max Distance Farmer's Walk	30 sec.
Max Sumo Deadlift (~60% 1RM)	30 sec.

Finisher

Barbell Good Morning	1	100
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DAY 3

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Upper Body</u>		
Speed Bench Press	10 ⁷	3
<u>Assistance Work</u>		
Barbell Push Press	3	8
One-Arm Dumbbell Row	3	8 (each side)
<u>Core Work</u>		
Dumbbell Windmill ⁵	3	8 (each side)
<u>Conditioning</u>		
<i>AMRAP in six minutes:</i>		
Inverted Row		9
Kettlebell Swing ³		12
Dumbbell Russian Twist		15 (each side)
<u>Finisher</u>		
Barbell Row	1	100

DAY 4

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Lower Body</u>		
Barbell Squat	12 ¹³	2
Sumo Deadlift	8 ¹⁰	1
<u>Assistance Work</u>		
Stiff-Legged Deadlift	3	8
Barbell Glute Bridge	3	10
<u>Core Work</u>		
Weighted Sit-Up	3	12
<u>Conditioning</u>		
<i>Work for 60 seconds, then rest two minutes. Do four rounds:</i>		
Plate Push (30 feet, 15 feet each way)		
Front Squat (~60% 1RM)		Max reps
<u>Finisher</u>		
Back Extension	1	100

13 Sets begin every 45 seconds with maximum bar speed. Load the bar with approximately 75 percent of your 1RM.

ONE-ARM DUMBBELL ROW

A foundational back builder, this exercise greatly enhances pulling power. Performing the one-arm version is key because studies show that you can generate up to 20 percent more force when working unilaterally. Pull the weight as high as possible toward your midsection and don't let your forward lean be any higher than about 45 degrees.



WEEK 4

DAY 1

Exercise/Activity	Sets	Reps/Time
<u>Max Effort: Upper Body</u>		
Find 1RM Decline Bench Press		
<u>Assistance Work</u>		
Pull-Up	3	To failure
Dumbbell Floor Press	3	10
<u>Core Work</u>		
Kneeling Cable Crunch	3	10
Plank	3	60 seconds
<u>Conditioning</u>		
EMOM for 10 minutes: Circus Dumbbell Press ¹		20 seconds
<u>Finisher</u>		
Face Pull	1	100

DAY 2

Exercise/Activity	Sets	Reps/Time
<u>Max Effort: Lower Body</u>		
Find 1RM Sumo Deadlift from 4" Blocks		
<u>Assistance Work</u>		
One-Leg Dumbbell Deadlift	3	8 (each side)
Alternating Dumbbell Step-Up	3	10 (each side)
<u>Core Work</u>		
Dumbbell Windmill ⁵	3	8 (each side)
<u>Conditioning</u>		
AMRAP in nine minutes: Alternating Barbell Lunge Dumbbell Overhead Press		6 (each side) 9
<u>Finisher</u>		
Barbell Good Morning	1	100

PLYOMETRIC PUSH-UP

The plyometric push-up activates the powerful fast-twitch muscle fibers in your chest, shoulders and triceps. This dynamic, max-effort activity holds tremendous carryover for those who are serious about building pressing strength. You can perform these on flat terrain or alternating between higher and lower targets, as shown.



DAY 3

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Upper Body</u>		
Speed Bench Press	10 ⁷	3
<u>Assistance Work</u>		
Chest Dip ⁸	3	8
Inverted Row	3	12
<u>Core Work</u>		
Dumbbell Side Bend	3	12 (each side)
<u>Conditioning</u>		
Work for 60 seconds, then rest three minutes. Do four rounds:		
Barbell Overhead Press		60 seconds
<u>Finisher</u>		
Incline Bench Rear Lateral Raise	1	100

DAY 4

Exercise/Activity	Sets	Reps/Time
<u>Dynamic Work: Lower Body</u>		
Barbell Front Squat	12 ⁹	2
Sumo Deadlift	8 ¹⁰	1
<u>Assistance Work</u>		
Stiff-Legged Sumo Deadlift	3	8
Back Extension	3	12
<u>Core Work</u>		
Plate Russian Twist	4	20 (each side)
<u>Conditioning</u>		
EMOM for 15 minutes:		
Minute 1: Plate Push (30 feet, 15 feet each way)		
Minute 2: Kettlebell Swing ³		12
Minute 3: Barbell Jump Squat		5
<u>Finisher</u>		
Barbell Glute Bridge	1	100

WEEK 5

DAY 1

Exercise/Activity	Sets	Reps/Time
<u>Max Effort: Upper Body</u>		
Find 1RM Pause Bench Press		
<u>Assistance Work</u>		
Barbell Row	3	10
Triceps Pressdown	3	12
<u>Core Work</u>		
Weighted Sit-Up	3	12
Plate Russian Twist	3	30 (each side)
<u>Conditioning</u>		
AMRAP in nine minutes, using a 1-2-3-4-5-6-7-8-9 protocol:		
Bench Press (~60% 1RM)		
Pull-Up		
<u>Finisher</u>		
Face Pull	1	100



DUMBBELL WINDMILL

For this ham-and-obliques killer, control is key. Standing with your feet far apart, raise the dumbbell overhead and lock your arm in this position. Bend over to touch the floor between your feet or your same-side foot with your opposite hand, then reverse direction back to the start, keeping your eyes on the dumbbell the whole time. Complete all reps for one side before switching.

DAY 2

Exercise/Activity	Sets	Reps/Time
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Max Effort: Lower Body

Find 1RM Zercher Squat

Assistance Work

4" Deficit Deadlift ¹²	3	8
Back Extension	3	12

Core Work

Kneeling Cable Crunch	3	10
Plank	3	75 seconds

Conditioning

Do each exercise, then rest two minutes. Do six rounds:

Farmer's Walk (100 feet, 50 feet each way)	
Kettlebell Swing ³	To Failure

Finisher

Barbell Glute Bridge	1	100
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DAY 3

Exercise/Activity	Sets	Reps/Time
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Dynamic Work: Upper Body

Speed Bench Press	10 ⁷	3
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Assistance Work

Lying Triceps Extension	3	10
Close-Grip Push-Up	3	To failure

Core Work

Barbell Rollout	3	12
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Conditioning

Rest 30 seconds between exercises and 60 seconds between rounds. Do three rounds:

Renegade Row	30 seconds
Plate Russian Twist	30 seconds

Finisher

One-Arm Dumbbell Row	2	50 (each arm)
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DAY 4

Exercise/Activity	Sets	Reps/Time
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Dynamic Work: Lower Body

Barbell Front Squat	12 ¹⁴	2
Sumo Deadlift	8 ¹⁰	1

Assistance Work

Barbell Glute Bridge	3	8
Kettlebell Swing	3	20

Core Work

Plate Russian Twist	4	20 (each side)
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Conditioning

Do eight rounds for time, resting one minute between rounds. Strive to complete each round in the same time as your first round:

Plate Push (30 feet, 15 feet each way)	
Plyometric Push-Up	5
Deadlift (~75% 1RM)	3

Finisher

Barbell Good Morning	1	100
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14 Sets begin every 45 seconds with maximum bar speed. Load the bar with approximately 70 percent of your 1RM.

WEEK 6

DAY 1

Exercise/Activity	Sets	Reps/Time
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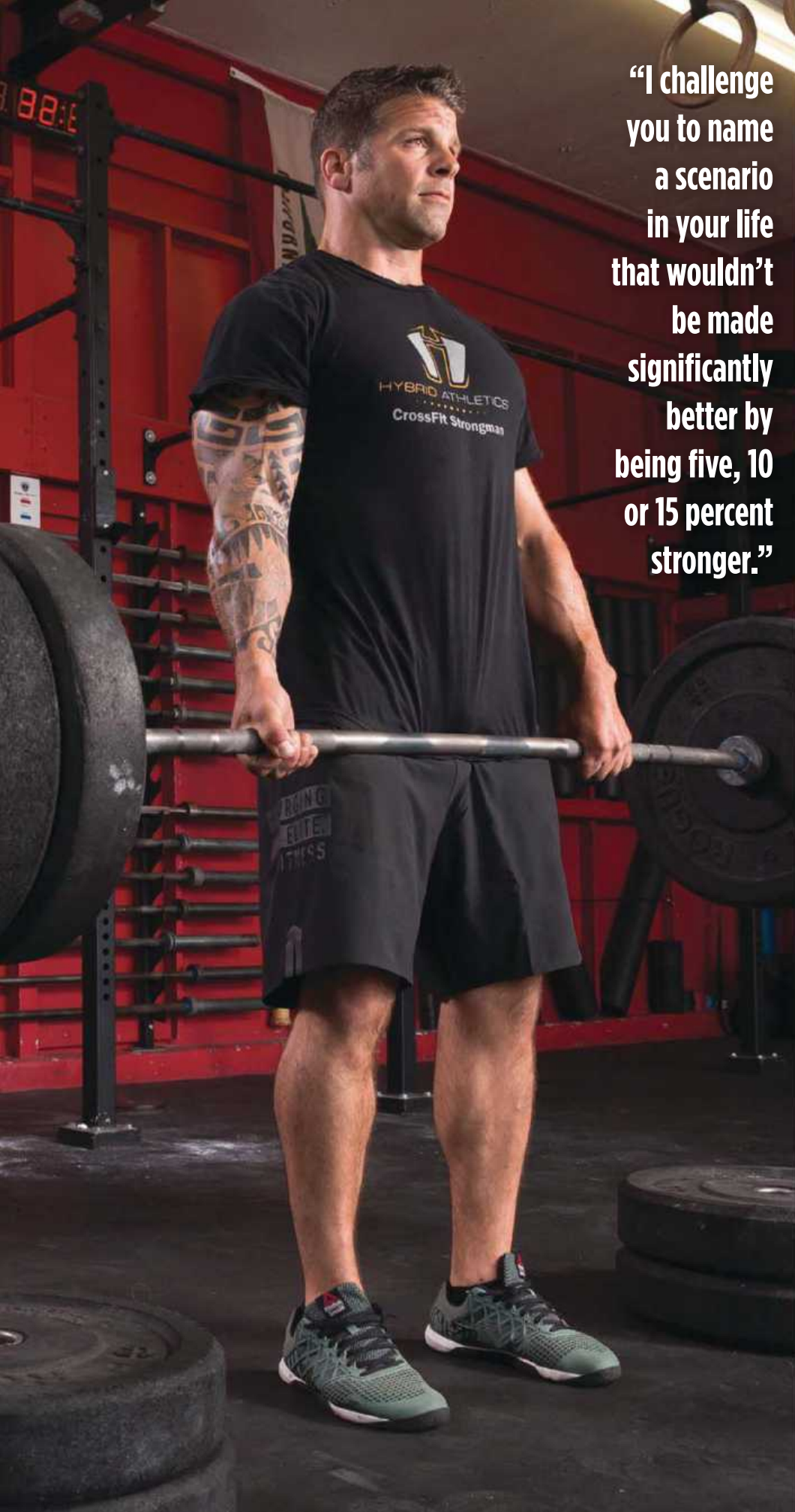
Baseline Test

Circus Dumbbell Press ¹	1	60 seconds
18" Deadlift ⁴	1	60 seconds

PLATE PUSH

Who needs a sled? If you have a heavy weight plate (45 pounds will suffice) and some flat terrain, you can reap many of the same strength and conditioning benefits. Press forward as quickly and aggressively as you can for the prescribed distance or time.



A full-page photograph of Rob Orlando, a muscular man with tattoos on his left arm, standing in a gym. He is wearing a black t-shirt with 'HYBRID ATHLETICS CrossFit Strongman' and black shorts. He is holding a barbell with both hands, preparing for a lift. The background shows gym equipment and a red wall.

"I challenge you to name a scenario in your life that wouldn't be made significantly better by being five, 10 or 15 percent stronger."

STRENGTH MATTERS

Like his training, Rob Orlando's opinions on matters of strength are raw, unfiltered and primal.

Why do you think strength is so fundamental to ... well, everything?

This question actually makes me cringe. I challenge you to name a scenario in your life that wouldn't be made significantly better by being five, 10 or 15 percent stronger.

What do you believe is the key to getting strong consistently?

The formula has always been simple: Lift heavy things often. My objective at the end of the day or week or year is to acquire more reps than the guy next to me. The more heavy reps I do, the stronger I'll be over time. It's that simple.

How would you characterize the difference between pure strength training and, say, lifting to gain muscle and/or get lean?

Pursuing strength is a lifetime endeavor with no obvious finish line. When a man deadlifts 1,000 pounds, before the weights hit the floor his first thought is, "I wonder if I can do 1,001?" Getting shredded or gaining size requires incredible discipline for a shorter amount of time. Gaining strength naturally requires a lifetime of dedication.

What do strongman-type exercises bring to the casual lifter?

Strongman exercises allow a lifter to move large loads over long distances quickly, and anyone can do them without very much technical know-how. Grab a keg that weighs as much as you and carry it around for five or 10 minutes. It'll get you strong and you don't need to spend a thousand hours perfecting your Olympic lifts.

What do you think about this type of subject matter finding its way into a magazine like M&P more often?

It's about f---ing time. There is incredible value in these movements and this methodology, and it applies to people of all ages and ability. Any magazine claiming to be an authority on fitness has a moral obligation to explore all avenues of strength training.

What was it like shooting your first mag cover?

I felt like a bit of a putz, if I'm totally honest. The only upside is that I didn't use fake weights! Knowing that other cover athletes have resorted to fake weights makes me chuckle.

For more of Rob Orlando's training philosophy, visit hybridathletics.net. ■

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12

HEALTHY HABITS FOR HUNGRY ATHLETES

REPROGRAM YOUR NUTRITIONAL HARD DRIVE BEFORE NEW YEAR'S BY ADOPTING THESE PERFORMANCE-GEARED STRATEGIES.

BY MATTHEW KADEY, MS, RD

DON'T LOOK NOW, BUT 2015 IS ALMOST GONE.

Some of you are likely already scribbling down goals for 2016, but you don't have to wait till Jan. 1 to start enacting the same tired, requisite resolutions: Clean out the garage, stop binge-watching "The Walking Dead," be nicer to the in-laws and learn to love (OK, tolerate) burpees.

Of course, the desire to eat better is one of the most often-cited resolutions and, in turn, also one of the most likely to fail. That's because people tend to aim for unrealistic dietary goals that are doomed nearly from the get-go. After all, it's hard to keep your enthusiasm going strong when you've decided to nix Friday-night pizza with your pals from your diet completely.

A better strategy for recalibrating your diet is to simply implement a number of less-cumbersome eating strategies — many already embraced by elite athletes — that on their own don't seem earth-shattering but when added up can pack a serious punch. And you don't have to wait for a turn of the calendar year to do it. In fact, if you commit to even a handful of these dozen eating habits designed to maximize your nutritional gains in the least painful way possible, we promise you'll head into 2016 like a resolution wrecking ball.



1

HEALTHY HABIT #1: SWITCH THINGS UP

Your oatmeal for breakfast and chicken breast for dinner are healthy choices, but you'd do well to consider switching things up by embracing new edibles more often. Research from the Institute of Food Technologists suggests that eating a wider variety of foods fosters a greater diversity of bacteria in your gut, which may play a role in improved digestive and immune health, reduced inflammation and even fat loss. Different bacteria flourish in the presence of different foods and nutrients, so if you mix up your food choices more often you'll encourage a bacterial melting pot in your belly. More reason to test-run bison burgers and persimmons: A 2015 investigation in *The Journal of Nutrition* discovered that individuals who consumed a greater variety of foods tended to have less body fat than those who adhered to more limited eating plans.

ACTION PLAN: For a healthier gut ecosystem and less flab, aim to toss a few "new" foods into your cart on each trip to the grocery store. Try a different green like bok choy in your salads, an unusual grain like teff for your breakfast porridge or an exciting swimmer like Arctic char for your dinner protein fix.

HEALTHY HABIT #2: THINK GREEN WHEN SHOPPING FOR RED

It's true: You are what your food eats. Recent research published in *Comprehensive Reviews in Food Science and Food Safety* again suggests that red meat sourced from animals such as cattle and lamb that feasted on grass possesses a better fat profile, including higher levels of heart-healthy polyunsaturated fats. In fact, levels of ultra-healthy omega-3 fats may be 25 percent higher compared to what's found in a steak from factory farm animals fattened up on grains.

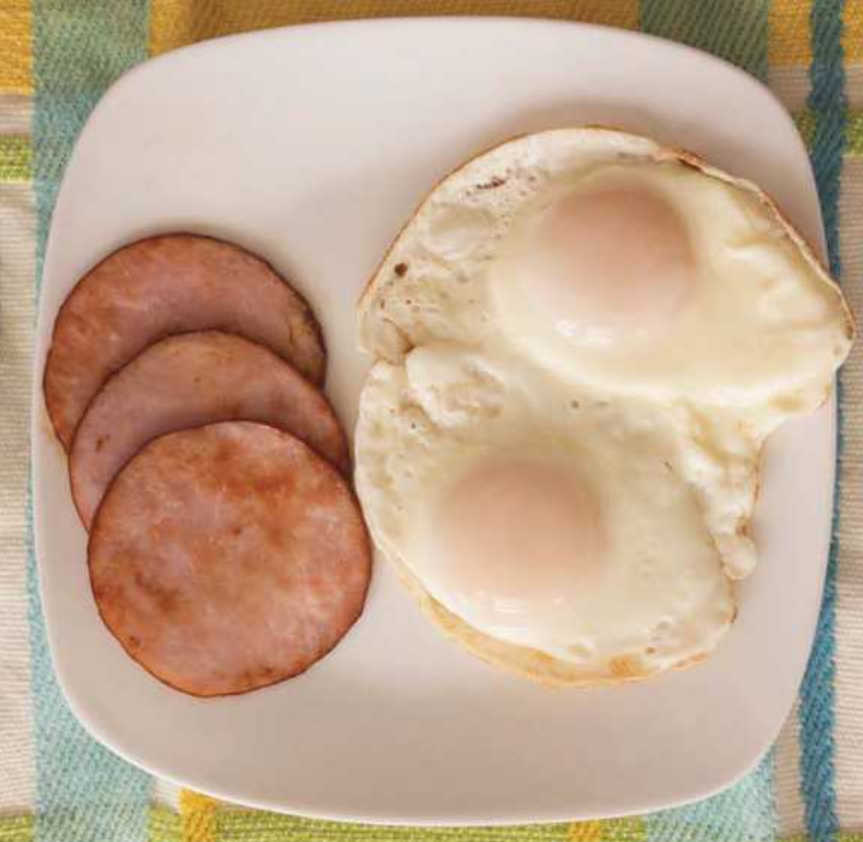
ACTION PLAN: Stop wasting your money on Frappuccinos and instead splurge on cuts of red meat labeled "100% grass fed." Meat simply labeled "organic" doesn't necessarily mean an animal had regular access to pastures to feed on.



HEALTHY HABIT #3: CAN THE CANS

If you give your can opener a regular workout, consider giving it the day off more often. That's because most cans in the supermarket are lined with bisphenol A (BPA), an endocrine-disrupting chemical with hormone-mimicking powers that has been linked to everything from high blood pressure to obesity to heart disease with high exposures. So relying too often on canned corn, tuna or beans may not help you carve your core.

ACTION PLAN: When it comes to vegetables and beans, consider opting for their frozen or dried versions that are BPA-free more often. Of course, fresh or frozen fish don't come with any BPA risk, either. And if you've embraced the craft beer boom, you may want to enjoy your occasional quaff from a glass bottle instead of the can.



HEALTHY HABIT #4: **EAT BREAKFAST LIKE A KING**

It's time to rise and dine. A study in the journal *Obesity* found that volunteers who front-loaded their calories by eating their largest meal at breakfast lost more fat over a 12-week period than those who took in more calories later in the day. A similar study found that those who ate their major meal after 3 p.m. shed less weight during a 20-week period than those who ate their main meal before 3 p.m., even when the amounts they ate, exercised and slept were the same. Eating more of your calories early in the day may also help you take advantage of a higher metabolism, resulting in less of a chance that the food you eat will show up as doughy flesh.

ACTION PLAN: Most people consume about 17 percent of their daily calories at breakfast, 24 percent at lunch and 34 percent at dinner, according to USDA survey data. Instead, try eating as many calories (if not more!) at breakfast as you would at lunch or dinner. And be sure to include plenty of protein such as eggs, Canadian bacon or protein powder since high-protein morning repasts have been shown to aid in the battle of the bulge.

HEALTHY HABIT #5: **SPIKE YOUR OATMEAL**

Not just for Wilford Brimley, adding bran to your diet can keep your ticker beating strong. Harvard scientists found that people who consumed 10 grams (about 2 teaspoons) of bran daily slashed their risk of dying from heart disease by a whopping 20 percent. The sky-high levels of fiber in bran may block the absorption of harmful LDL cholesterol. It may also keep the flab monster at bay by boosting satiety, thereby preventing unnecessary snacking.

ACTION PLAN: For a simple and inexpensive nutritional upgrade, try stirring oat or wheat bran into your morning oatmeal or even blend some into your protein shakes and pancake batter.



HEALTHY HABIT #6: **BE THE CHEF**

Sure, it's convenient to pull up to the drive-thru window or let someone else cook your protein-style burger, but research continues to show that preparing your own meals is clutch when you want to eat healthy and stay fit. Case in point: A recent University of Illinois study found that higher-end restaurants can deliver higher amounts of undesirables such as sodium and cholesterol to your dinner plate than do fast food joints. Regardless of where people ate out, however, researchers determined that it resulted in the consumption of more potentially gut-busting calories than when food was prepared at home.

ACTION PLAN: If you want to keep your six-pack fully stocked this year, follow the 90-10 rule. That is, 90 percent of the food you eat comes from your own kitchen with no more than 10 percent sourced elsewhere.



HEALTHY HABIT #7: **EMBRACE MEATLESS MONDAYS**

Even if you're a passionate carnivore, it's a good idea to trade in your tenderloin for tofu on occasion. Not only are there environmental benefits to consuming more plant-based foods, but studies show that vegetarian eating can also help trim the waistline and increase intakes of the fiber, vitamins, minerals and antioxidants that are vital for good health. It also offers a chance to try out some new foods as you adhere to healthy habit No. 1.

ACTION PLAN: Once a week, try eating a vegetarian-style diet by turning to items such as beans, Greek yogurt, hemp seeds, lentils and tofu to meet your protein needs. Your beloved steak will taste even better the next day.

HEALTHY HABIT #8: **TAKE A WHIFF**

For a near-perfect protein source, don't turn up your nose at strong-smelling fish such as herring, mackerel and sardines. Not only are they some of the most sustainable options — and certainly better than Chilean sea bass and farmed salmon — but these gifts from the sea are brimming with omega-3 fatty acids that have been linked to everything from improved heart health and brain power to greater exercise performance and lean mass by increasing muscular blood flow. And sardines and their ilk are almost always very budget-friendly.

ACTION PLAN: It's easy to sneak more of these nutritional overachievers into your diet. Smoked mackerel can make any sandwich better. Canned sardines are excellent in pasta dishes. Pickled herring is great straight from the jar. And you can gussy up salad dressings with anchovies.



HEALTHY HABIT #9: **EAT ON THE BRIGHT SIDE**

Good nutrition is not a black-and-white issue. When it comes to the food we eat, color is a cue for optimal health. That's because many of the pigments that fruits and vegetables glean their dynamic shades from are considered phytonutrients (antioxidants that can halt the age-accelerating, cell-damaging impact of free radicals in the body). So if you aim to eat the rainbow every day, you'll automatically consume a greater diversity of antioxidant firepower.

ACTION PLAN: When pushing your cart through the produce aisle, aim to fill your meals with plenty of different shades such as dark-green leafy veggies, yellow bell peppers or squash, orange sweet potatoes, vibrantly hued berries and more.



HEALTHY HABIT #10: **SHELVE THE SWEET STUFF**

There's no sugarcoating the fact that added sugars can sour your fitness gains. According to a report published in the journal *Clinical Obesity*, of everything we typically eat (including high-calorie oils), sugar is the greatest predictor of weight gain. And since the typical American diet includes more than 20 grams of added sugar a day, it's easy to see why our collective girths keep on rising.

ACTION PLAN: Since cutting back on added sugar — not the naturally occurring sugars in fruits, veggies and dairy — is one of the most important steps to keeping your physique in tip-top shape, be sure to read ingredient lists on food packaging carefully and choose items such as breads, nut butters, yogurt and even protein powders that don't surreptitiously sneak in sugar.

HEALTHY HABIT #11: **HAVE A PROTEIN NIGHTCAP**

Here's more reason to wax poetic about protein: A 2015 study in *Nutrition Journal* found that healthy men involved in regular resistance training who consumed 28 grams of protein shortly before hitting the sack experienced more improvements in muscle growth and strength than those who took in no protein before bed. During sleep the body is primed to work on muscular recovery, so supplying it with some amino acids can accelerate this process.

ACTION PLAN: To keep muscle growth going full force in the year ahead, commit to consuming some protein before bedtime. This can come from a couple of hard-boiled eggs or a bowl of cottage cheese, which has the added benefit of being a stellar source of slow-digesting casein protein for a steady flow of anabolic amino acids to your muscles while you're in dreamland. Or if you prefer to shake and sleep, you can mix micellar casein powder with water or milk.



HEALTHY HABIT #12: **GO NUTS**

If there's just one food group you may want to eat more of, it should be nuts. That's because research continues to pile up that almonds, pistachios, walnuts and other members of the crunch bunch offer a number of health-hiking perks. For instance, Harvard researchers determined that those who snack on nuts every day were up to 20 percent less likely to die from diseases such as cancer or heart disease. Regular nut eaters are also at less risk of being pudgy, despite the high amount of calories nuts contain. A synergy between the fiber, protein, vitamins and minerals in nuts is likely why they can keep the doctor and Buddha-belly at bay.

ACTION PLAN: Look for ways to add 1 to 2 ounces of nuts to your everyday diet. This can be as easy as adding them to oatmeal, salads or yogurt, or simply grabbing a handful for a midmorning snack. ■



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5 BOLD *BREAKFASTS*

REJUVENATE YOUR MORNING
FEEDING WITH THESE UNIQUE
PROTEIN-RICH CONCOCTIONS.

BY DANA ANGELO WHITE, MS, RD, ATC,
AND ERIC VELAZQUEZ, CSCS

Eggs provide perfect protein and issue a pre-emptive beatdown on midday cravings, making them an ideal choice for the physique-conscious among us. But by expanding your menu of breakfast proteins, you can give your body (and brain) a welcome respite from the expected while also filling up with other high-octane fuel sources and health-bolstering nutrients.

You see, when you wake up in the morning, your body is, like, *super* needy. It's whining for amino-rich proteins to halt muscle wasting, it's nagging for carbs to top off tanks depleted from your overnight fast, and it wants at least a little bit of your attention in the healthy fats department to feed your joints and brain. It may also send you some passive-aggressive signals about vitamins and minerals. You'll miss them if you're not really listening (as usual).

Each of these easy-to-prep breakfasts helps you satisfy those needs with far fewer cracks of the egg and even offers options for those whose breakfast nook is car-bound.

HIGH-PROTEIN HONEY AND FLAX OATMEAL

Yes, eggs are a morning staple, but just as ubiquitous at breakfast time is oatmeal, which provides lasting energy and keeps you full through your morning email blitz. Hopefully you have abandoned the pre-packaged, sugar-laden faux meals in place of your own healthy, old-fashioned or steel-cut oats recipe. If you have, we salute you. But from time to time, it's a good exercise to experiment with new flavors and textures. This high-flavor variation still packs in plenty of whole-grain, fiber-heavy goodness, but it also punches up the protein content by way of an underused source: Greek yogurt. Toss in some flax for heart-healthy omega-3s and blueberries for cell-protecting antioxidants and you have the makings of a power breakfast.

INGREDIENTS

- 1 cup rolled oats
- pinch kosher salt
- 1 tablespoon honey
- 2 tablespoons ground flaxseeds
- 1 cup skim milk
- ½ cup plain nonfat Greek yogurt
- ¼ cup blueberries

DIRECTIONS

In a medium saucepan, combine oats, salt, honey, flaxseeds and milk. Bring to a simmer; reduce heat and cook for eight to 10 minutes, stirring frequently until thick and creamy. Add yogurt and stir well. Serve topped with blueberries. **Serves 1.**

NUTRITION FACTS: 517 CALORIES, 32 GRAMS PROTEIN, 75 GRAMS CARBS, 12 GRAMS FIBER, 11 GRAMS FAT

EGG AND TURKEY SAUSAGE CUPS

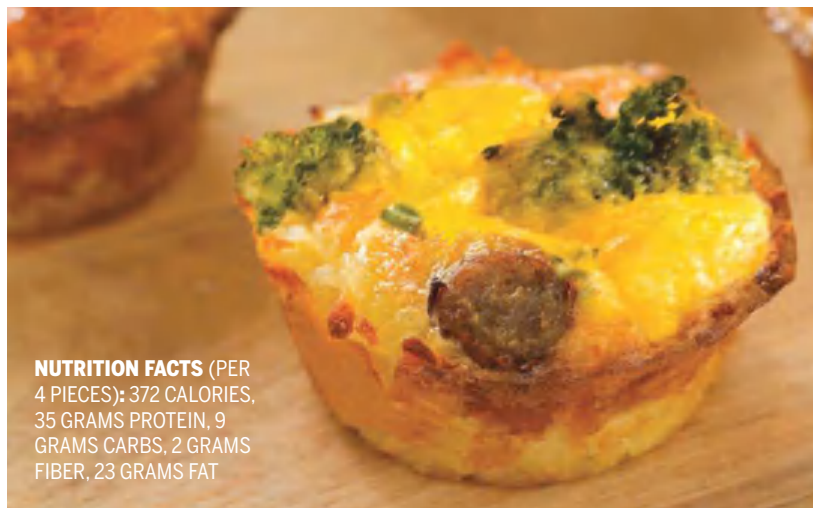
You didn't think we were going to completely abandon the egg, did you? Eggs provide complete protein, which is to say that they contain all nine essential amino acids (those that the body can't synthesize on its own). That doesn't really sound tasty, but you know what does? Sausage. Sure, none of us wants to know how it's made, but nobody turns it down at the breakfast table. Turkey sausage is a better alternative than pork sausage because of its lower fat (and mystery meat) content, and it diversifies the flavor profile of any egg dish. But the concept of the cup and the portability it offers is what sets this recipe apart. Simply make these ahead of time, store in the freezer, pop in the microwave and voilà ... breakfast in seconds. You also can toss one or two into a whole-grain wrap as a high-carb option.

INGREDIENTS

- 1 package (7 ounces) frozen turkey-sausage links, thawed and chopped
- 4 large whole eggs
- 4 large egg whites
- ½ cup milk
- ½ teaspoon kosher salt
- hot sauce and freshly ground black pepper to taste
- 1 cup chopped broccoli
- 1 cup shredded cheddar cheese

DIRECTIONS

Preheat oven to 350 degrees. Spray a 12-cup muffin pan with nonstick spray. Evenly distribute sausage in each muffin cup, then set aside. Combine eggs, egg whites and milk in a blender; season with salt, hot sauce and pepper; and blend for 30 seconds. Pour egg mixture into muffin pan, filling each cup about two-thirds of the way, then sprinkle with broccoli and cheese. Bake for 15 minutes or until eggs are set; cool slightly before serving. **Makes 12 cups.**



NUTRITION FACTS (PER 4 PIECES): 372 CALORIES, 35 GRAMS PROTEIN, 9 GRAMS CARBS, 2 GRAMS FIBER, 23 GRAMS FAT



**“A COFFEE SMOOTHIE
IS THE ULTIMATE
BREAKFAST SHAKE”**

Coffee Power Shake
recipe on page 59

VANILLA-ALMOND-CHIA PROTEIN BARS

Prepackaged nutrition is an attractive option for busy mornings, but picking the right bar can be a delicate undertaking. With labels promising “low-sugar” and “protein-rich” nutrition, it’s easy to just go with a box of whatever tastes good. But more often than not, what tastes the best is the worst for your physique. What the nutrition companies don’t want you to know is that making bars in the comfort of your own kitchen is actually not much of a chore at all. This recipe combines (in no particular order) honey, almond butter and vanilla-flavored protein powder. Sure, there’s other stuff, but these ingredients alone hold tremendous promise for clean morning nutrition. These homemade bars are better than anything out of a box and can be consumed as a portable breakfast or a postworkout treat.

INGREDIENTS

- ½ cup honey
- ½ cup almond butter
- ½ cup boxed coconut milk
- ½ cup vanilla protein powder
- 1 tablespoon canola oil
- 2 cups rolled oats
- 1½ cups crisp brown-rice cereal
- ½ cup sliced almonds
- ¼ cup chia seeds
- ½ teaspoon kosher salt

NUTRITION FACTS: 516 CALORIES,
35 GRAMS PROTEIN, 45 GRAMS CARBS,
8 GRAMS FIBER, 24 GRAMS FAT

DIRECTIONS

Coat a 9-by-9-inch baking dish with cooking spray and set aside. Preheat oven to 350 degrees. In a small saucepan over medium heat, combine honey, almond butter, coconut milk, protein powder and canola oil. Stir and cook until mixture just begins to bubble, about two to three minutes. Remove from heat and set aside. In a large bowl, combine oats, rice cereal, almonds, chia seeds and salt; toss well. Pour warm honey mixture over oatmeal

mixture and stir gently with a spatula until well combined. Transfer to baking dish and press down evenly. Bake for 15 minutes, then allow to cool completely before cutting into six squares. **Makes 6 bars.**





PEANUT BUTTER AND BANANA GRANOLA WITH GREEK YOGURT

You've probably heard us mention once or twice that Greek yogurt is an excellent option for high-quality protein. But to be honest, plain yogurt — Greek or otherwise — is kind of a palate downer. Oftentimes, it's what you add to the yogurt that makes it sing. In this case, we're going to add a flavorful, nutrient-dense granola that can be stored in the fridge for up to two weeks. But once you taste it, we doubt it'll last that long. Naturally sweetened with honey and backed up by everyone's favorite by-the-spoon indulgence — natural peanut butter — this dessert-like recipe gives you a solid dose of fast- and slow-digesting carbs to go along with 30 grams of muscle-rebuilding protein (when combined with Greek yogurt).

INGREDIENTS

- ½ cup natural peanut butter
- 1 tablespoon canola oil
- 2 tablespoons honey
- 2½ cups rolled oats
- ¼ cup roasted peanuts, chopped
- ¼ cup pumpkin seeds
- ¼ teaspoon kosher salt
- ½ cup dried bananas
- 2 tablespoons mini chocolate chips, optional

DIRECTIONS

Preheat oven to 300 degrees. Spray a large baking sheet with nonstick spray. Mix peanut butter, oil and honey in a medium bowl. Microwave for 30 seconds or until melted; mix again. Next, combine oats, peanuts, pumpkin seeds and salt in a large bowl. Pour peanut butter mixture over oat mixture and gently toss. Transfer to prepared baking sheet. Bake, stirring occasionally, until golden brown (about 15 to 20 minutes). Remove from oven. Once cool, mix in dried bananas and chocolate chips, if using. Store in an airtight container for up to two weeks. **Makes 4 cups.**

NUTRITION FACTS (6 OUNCES YOGURT + 1 CUP GRANOLA): 508 CALORIES, 30 GRAMS PROTEIN, 40 GRAMS CARBS, 6 GRAMS FIBER, 19 GRAMS FAT

COFFEE POWER SHAKE

Smoothies rock. Coffee is essential. Put them together and you have the ultimate breakfast shake. But instead of standing in line and paying \$6 for a barista to blend away, you can whip this one up in your kitchen for a fraction of the cost per serving. This power shake offers a whopping 40 grams of protein to kick-start your muscle machinery. But you can save your powders: Vanilla soy milk offers a tasty alternative while cottage cheese provides a hit of slow-digesting casein. If you include full-strength coffee, you're looking at about 160 milligrams of eye-opening caffeine, which boosts alertness and cognition for your morning drive.

INGREDIENTS

- 1 cup brewed coffee (regular or decaf)
- 1 cup unsweetened vanilla soy milk
- 1 cup low-fat, no-salt-added cottage cheese
- 1 medium frozen banana
- honey and cinnamon to taste
- ice, to desired texture

DIRECTIONS

Combine ingredients in a blender and blend until smooth. **Serves 1.**

NUTRITION FACTS: 360 CALORIES, 40 GRAMS PROTEIN, 43 GRAMS CARBS, 3 GRAMS FIBER, 6 GRAMS FAT ■



PEAK YOUR PHYSIQUE

In the right ratios, BCAAs can improve endurance, strength and overall body composition. Inner Armour's BCAA Peak rocks a leucine-loaded 12:1:1 formula that just plain works.

While you may agonize over which supplements to budget for each month, it's important to note that there may be no better nutrients for creating muscle than BCAAs. If you're a serious athlete or even just serious about improving body composition, BCAAs should be a critical part of your daily routine. But as Inner Armour's BCAA Peak shows, not all formulas are created equal.

An often undervalued member of the supps family, branched-chain amino acids (BCAAs) include three crucial aminos for feeding your physique: leucine, isoleucine and valine. Our bodies would fail without these essential nutrients because we cannot make them ourselves.

BCAAs are good for general health but are especially valuable for those concerned with sports performance or physique improvement. Isoleucine increases the uptake of energy by muscles during exercise, allowing for a longer workout before a muscle starts to "feel the burn." Valine helps to build muscle, too, and studies show that leucine is especially good at stimulating protein synthesis. Leucine supplementation actually increases the total concentration of BCAAs in the body, facilitating an increase in both

output and muscle growth, which is why BCAA Peak uses a scientifically backed, leucine-heavy ratio of 12:1:1 (leucine, isoleucine and valine). It also includes glutamine, because studies show that when an adequate amount of glutamine is ingested, the body increases the rate of protein synthesis and recovery as well as the rate at which lean body mass is gained while also improving immune function.

BCAAs aren't just valuable for recovery. They're a potent intraworkout source of fuel that can help you train longer and harder. Research has shown that taking BCAAs before a workout can delay time to fatigue, making it ideal to keep with you in a shaker cup while you train. If that weren't enough, BCAA ingestion has been shown to increase post-workout levels of growth hormone (GH).

Adding Inner Armour's BCAA Peak to your routine can help you train harder, speed healing and leave you feeling less like a rusted machine, faster. BCAA Peak can be taken before, during and/or after workouts and contains an elite 12:1:1 ratio of branched-chain aminos, including 6.2 grams of leucine plus 2.5 grams of L-glutamine per serving. BCAA Peak is sugar-free and gluten-free, and contains no dyes. ■



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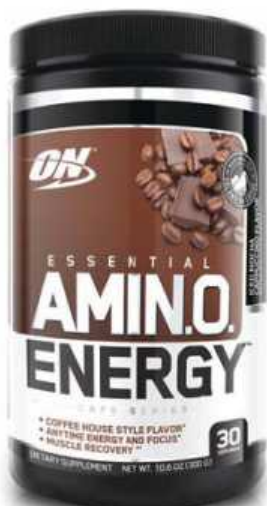
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< BEAST CREATURE

Creature is a professional-strength creatine complex that uses four of the most advanced forms available to fuel muscle growth, increase strength and accelerate recovery. Creatine is used in both intense weight training and endurance activities, helping you to push harder, go faster and recover more quickly. Creature is a core part of any training program to keep you fit and strong.



MAN SPORTS PEPTEST BULK >

Start building size before you even step into the gym with PepTest Bulk, a first-of-its-kind product in the pre-workout category that ignites testosterone levels with the first sip. PepTest Bulk helps you push every rep harder than you could before.



< OPTIMUM NUTRITION ESSENTIAL AMINO ENERGY

In addition to nine fruit flavors, ON's Amino Energy is now available with coffeehouse-style flavor. Each serving still delivers 100 milligrams of caffeine from natural sources and 5 grams of micronized free-form amino acids. Look for the Iced Mocha Cappuccino flavor in Vitamin Shoppe stores soon.



BODYTECH HEXATEIN-SR >

Hexatein-SR is a blend of six different proteins, including micellar casein and whey. Each serving is packed with 21 grams of protein formulated to supply a staged release of aminos throughout the day. It also supports muscle building and repair, especially while your body is at rest.



< MUSCLE ELEMENTS PRECRE

PreCre is a pre-workout formula containing more than 20 grams of active ingredients. It provides the body with everything it needs to perform at its highest level so you can experience intense energy and focus, huge muscle pumps and increased strength.



< MUSCLETECH PHOSPHA MUSCLE

All-new Phospha Muscle from MuscleTech delivers a clinically researched dose of the purest form of phosphatidic acid available, Mediator PA. It was shown to help study subjects build 5.3 pounds of muscle in eight weeks and increase their one-rep max leg-press strength by 60 percent.

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MHP's CRE5 is a next-generation supercreatine supplement that provides an advanced blend of creatine monohydrate, creatine HCl, creatine MagnaPower, creatine AKG and creatine AAB for maximum muscle volumizing and saturation. CRE5's enhanced absorption allows you to build muscle and strength rapidly and recover faster. It's so powerful, there's no loading necessary.



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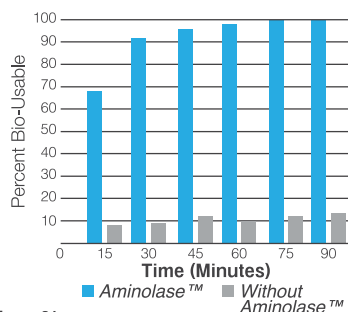


Figure 01

Stomach Discomfort After Protein Ingestion

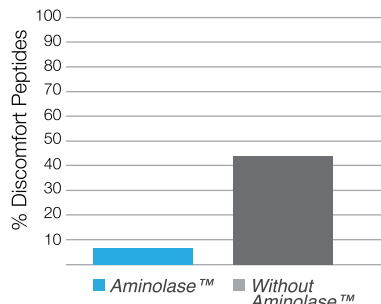


Figure 02



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5WAYS

KETTLEBELLS BUILD STRENGTH & ATHLETICISM

COULD KETTLEBELLS JOIN BARBELLS AND DUMBBELLS IN THE RANKS OF GREAT STRENGTH-BUILDING TOOLS?

BY ANTHONY J. YEUNG, CSCS



We don't know you, but we're guessing you want to pile on the weight with your squat, bench and deadlift. We get it. You should. But there's more to boosting your strength than just barbells and dumbbells. In fact, there's another, less popular gym tool that will not only increase your numbers but also make you a better overall athlete, regardless of your age or experience level. Here we show you why kettlebells are so effective for increasing strength and athleticism and share a few ways to start adding them to your workouts.

1 THEY DEVELOP POWER AND EXPLOSIVENESS

To build more strength, size and speed, you need to target your fast-twitch muscle fibers with power-focused exercises. When you focus on moving the weight faster, you increase your mus-

cle-fiber recruitment. But instead of doing Olympic lifts that require bumper plates and complex techniques, use kettlebell exercises such as swings, snatches and cleans that blast your fast-twitch fibers and activate your nervous system for bigger numbers on the other lifts. And they're much easier to learn.

2 THEY BOOST STABILITY AND CORE STRENGTH

For more strength on your lifts, tense your entire body to create a firm foundation for pushing and pulling heavy weight. When you activate one muscle, you spread tension and neural activity to surrounding muscles and unlock more strength and potential. That's where kettlebell exercises come in. For example, instead of doing a goblet squat by grasping a kettlebell with both hands, hold it

only on your right or left side to build core stability. Also, do "bottoms up" carries, which force you to tighten all the muscles in your body; the instant you lose tension, the kettlebell will fall over.

3 THEY INCREASE YOUR GRIP STRENGTH

If you want to get strong and add muscle, you need to build powerful forearms and a strong grip: You'll squeeze your weights harder, engage more muscles and generate more force to lift more weight, especially on all your pulls. With kettlebells, you can do heavy weighted carries to build your grip strength; a good starting point would be 50 feet. Once that becomes easy, use heavier bells or add to the distance. You can also do one-arm carries to further engage your core.

4 THEY'RE GREAT FOR CONDITIONING AND RECOVERY

If the only cardio you do is walking from the car to the gym, you're limiting your strength gains. Having better aerobic conditioning allows you to push harder during your workouts and recover faster between sets and on your rest days. It also encourages blood flow, which speeds up muscle repair. But you don't have to do a long, slow jog to boost your aerobic capacity. With kettlebells, you can do a light, invigorating circuit of swings, cleans, snatches and carries to improve your conditioning and endurance while building strength and power at the same time.

5 THEY REDUCE WEAR AND TEAR

If you've been blasting your joints and tendons with a lot of heavy weight, you can switch to kettlebells to take pressure off your body while still getting great results. The reason why kettlebells spare your body is that it takes less weight to get the same effect. For example, if you front squat 250 pounds with a barbell for several reps, two 28-kilogram (62-pound) kettlebells might feel just as hard because of the additional muscle recruitment that's required. Doing so will take a lot of pressure off your spine and joints while directly addressing your core and quads. ■

CLINICALLY TESTED MUSCLE BUILDING BEEF PROTEIN

2 SCOOPS, 8 WEEKS 8 LBS. MUSCLE MASS*

The muscle building power of beef cannot be disputed. Ask most any bodybuilder and they will tell you that they make their biggest muscle gains and feel their strongest when they eat beef. Thanks to the development of CARNIVOR's advanced bioengineered Beef Protein Isolate (BPI), MuscleMeds has formulated a highly anabolic muscle building protein supplement that's shown in clinical research to build muscle mass and increase strength!

A new clinical study demonstrated that hard training athletes supplementing with CARNIVOR Beef Protein Isolate gained an average of 7.7 lbs. of muscle mass in just 8 weeks, while increasing strength. Researchers gave test subjects 2 scoops of CARNIVOR BPI daily for 8 weeks while they exercised 5 days weekly. Athletes taking CARNIVOR BPI added an impressive 6.4% average increase in lean body mass. In contrast, the placebo group did not significantly improve their muscle mass from baseline.*

The study also showed that CARNIVOR BPI supplementation significantly increased lifting strength. Test subjects increased their average bench press strength by over 45 lbs. and added more than 90 lbs. to their deadlift over baseline.* These impressive clinical findings clearly validate the muscle and strength building power of CARNIVOR Beef Protein Isolate.



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*Sharp, et al., 2015 ISSN International Conference [Poster]. Muscle mass data based on male subjects. Lean body mass gains compared to baseline. Based on 2 scoops (46 grams protein) daily. Female subjects also experienced an increase in lean body mass.

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